

~~Exhibit A~~

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EDUCATION:

B.A., with Honors (1976) Hendrix College, Conway, Arkansas
Ph.D., (1980) Duke University, Durham, North Carolina (with Steven W. Baldwin)
Postdoctoral (1980-81) California Institute of Technology, Pasadena, CA (with David A. Evans)

PROFESSIONAL EXPERIENCE:

Graduate Assistant, Duke University, Durham, North Carolina (1976-80)
Research Fellow, California Institute of Technology, Pasadena, California (1980-81)
Assistant Professor, University of North Carolina, Chapel Hill, North Carolina (1981-88)
Associate Professor, University of North Carolina, Chapel Hill, North Carolina (1988-93)
Visiting Associate Professor, Duke University, Durham, North Carolina (1991)
Vice Chair, Facilities, Department of Chemistry, UNC, Chapel Hill, NC (1992-93)
Professor, University of North Carolina, Chapel Hill, North Carolina (1993-present)
Vice Chair, Graduate Studies, Department of Chemistry, UNC, Chapel Hill, NC (1995-2000)

HONORS:

Conway Corporation Scholar, Hendrix College, (1972-76)
M.J. McHenry Chemistry Prize, Hendrix College (1976)
DuPont Summer Fellow, Duke University (1977)
C.R. Hauser Fellow, Duke University (1979-80)
NIH-NCI Postdoctoral Fellow, California Institute of Technology (1980-81)
Junior Faculty Development Award, University of North Carolina (1983)
Invited Participant, 15th Annual NSF Synthesis Workshop, Squam Lake, New Hampshire (1984)
Alfred P. Sloan Fellow (1986-90)
Research Development Award, University of North Carolina (1988)
UNC-CH Foundation Leave (1991-92)
Invited Expert Analyst *ChemTracts Organic Chemistry* (1993-)
Chairman, North Carolina Section of the American Chemical Society (1994)
American Cyanamid Faculty Fellow (1994)
NIH Medicinal Chemistry A Study Section, March 1996; October 2000
Senior Class Favorite Faculty Award (1997)
Tanner Faculty Award for Excellence in Undergraduate Teaching, UNC-CH (1999)
Academy of Distinguished Teaching Scholars, UNC-CH (2000)
Roche Distinguished Lecturer, Colorado State University (2000)
Arthur C. Cope Scholar Award, American Chemical Society (2001)

CURRENT RESEARCH SUPPORT:

National Institutes of Health (GM38904), "Asymmetric Synthesis of Novel Natural Products,"
\$831,960 total costs (7-1-98 to 6-30-02).
National Institutes of Health (CA63572), "Asymmetric Synthesis of Polyketides,"
\$749,693 total costs (7-1-98 to 6-30-02).
National Institutes of Health, (GM60567), "Asymmetric Synthesis of Medium Ring Ethers,"
January 1, 2000 to December 31, 2003, \$758,778.
Department of Education, "Training of Scientifically Versatile Women and Minorities in the
Chemical Profession" Graduate Assistance in Areas of National Need (GAANN), August 15,
2000 to August 14, 2003, \$765,600.

PUBLICATIONS

1. "A Convenient Preparation of α -Methylene- δ -valerolactones," Baldwin, S.W.; Crimmins, M.T.; Cheek, V.I. *Synthesis* **1978**, 210-211.
2. "A Facile Synthesis of δ -Valerolactones by Photoannulation," Baldwin, S.W.; Crimmins, M.T. *Tetrahedron Lett.* **1978**, 4197-4200.
3. "Synthesis of the Alleged Genipic Acid by Photoannulation," Baldwin, S.W.; Crimmins, M.T. *J. Am. Chem. Soc.* **1980**, *102*, 1198-1199.
4. "Total Synthesis of (\pm) and (-) Sarracenin by Photoannulation," Baldwin, S.W.; Crimmins, M.T. *J. Am. Chem. Soc.* **1982**, *104*, 1132-1133.
5. "Addition of 1-Methoxy-1-butene-3-yne to Lactones: Synthesis of Substituted Spiroketal," Crimmins, M.T.; Bankaitis, D.M. *Tetrahedron Lett.* **1983**, *24*, 4551-4554.
6. "Synthesis of 5-Alkyl-2,3-dihydropyrones from 1-Methoxy-1-butene-3-yne," Crimmins, M.T.; Bankaitis, D.M. *Tetrahedron Lett.* **1983**, *24*, 5303-5304.
7. "Intramolecular Photocycloaddition-Cyclobutane Fragmentation: A Highly Stereoselective Total Synthesis of Pentalenic Acid," Crimmins, M.T.; DeLoach, J.A. *J. Org. Chem.* **1984**, *49*, 2076-2077.
8. "Conjugate Addition-Cycloacylation of Acetylenic Diesters: Synthesis of Highly Functionalized Cyclopentenones," Crimmins, M.T.; Mascarella, S.W.; DeLoach, J.A. *J. Org. Chem.* **1984**, *49*, 3033-3035.
9. "Intramolecular Photocycloadditions: Synthesis of Sterically Congested Substituted [4.5.5.5] Fenestranes.: Models for the Synthesis of Laurenene and Silphinene. Crimmins, M.T.; Mascarella, S.W.; Bredon, L.D. *Tetrahedron Lett.* **1985**, *26*, 997-1000.
10. "Intramolecular Photocycloadditions: Total Synthesis of (\pm)-Pentalenene, (\pm)-Pentalenic Acid, and (\pm)-Deoxypentalenic Acid," Crimmins, M.T.; DeLoach, J.A. *J. Am. Chem. Soc.* **1986**, *108*, 800-806.
11. "Synthesis of the Hexahydrobenzofuran Subunit of the Milbemycins and the Avermectins," Crimmins, M.T.; Lever, J. G. *Tetrahedron Lett.* **1986**, *27*, 291-294.
12. "Intramolecular Photocycloadditions-Cyclobutane Fragmentation: Total Synthesis of (\pm)-Silphinene," Crimmins, M.T.; Mascarella, S.W. *J. Am. Chem. Soc.* **1986**, *108*, 3435-3438.
13. "Synthesis and Electropolymerization of Distyrylbipyridine and Methylstyrylbipyridine Complexes of Iron, Ruthenium, Osmium, Rhenium, and Cobalt," Leidner, C.R.; Sullivan, B.P.; Reed, R.A.; White, B.A.; Crimmins, M.T.; Murray, R.W.; Meyer, T.J. *Inorganic Chemistry* **1987**, *26*, 882-891.
14. "Intramolecular Photocycloaddition-Cyclobutane Fragmentation: Total Synthesis of the Fenestrane (\pm)-Laurenene," Crimmins, M.T.; Bredon, L.D. *J. Am. Chem. Soc.* **1987**, *109*, 6199-6200.
15. "Selenium Initiated Cyclization-2,3-Sigmatropic Rearrangement: Synthesis of the C1 to C10 Fragment of the Milbemycins and the Avermectins," Crimmins, M.T.; Lever, J.G.; Hollis, W.G., Jr.; *Tetrahedron Lett.* **1987**, *28*, 3647-3650.

16. "Studies Directed Toward the Total Synthesis of the Milbemycins: Synthesis of the C11 to C31 Fragment of Milbemycin D," Crimmins, M.T.; Hollis, W.G., Jr.; Bankaitis-Davis, D.M. *Tetrahedron Lett.* **1987**, *28*, 3651-3654.
17. "Radical Cleavage of Cyclobutanes: Alternate Routes to (±)-Silphinene," Crimmins, M.T.; Mascarella, S.W. *Tetrahedron Lett.* **1987**, *28*, 5063-5066.
18. "ChemIntosh and ChemPanion," Software Review, Crimmins, M.T. *J. Am. Chem. Soc.* **1987**, *109*, 6905.
19. "Studies Directed Toward the Total Synthesis of the Milbemycins and Avermectins" in "Studies in Natural Products Chemistry," Crimmins, M.T.; Hollis, W.G., Jr.; O'Mahony, R. Elsevier, 1988; Atta-Ur-Rahman, Ed., p.435-485.
20. "A Total Synthesis of Milbemycin β_3 ," Crimmins, M.T.; Bankaitis-Davis, D.M.; Hollis, W.G., Jr. *J. Org. Chem.* **1988**, *53*, 652-657.
21. "Intramolecular [2 + 2] Enone Olefin Photocycloadditions in Natural Product Synthesis," Crimmins, M.T. *Chemical Reviews*, **1988**, *88*, 1453-1473.
22. "A Synthesis of (-)-Talaromycin A," Crimmins, M.T.; O'Mahony, R. *J. Org. Chem.* **1989**, *54*, 1157-1161.
23. "Synthesis of the Spiroketal Fragment of Avermectin B_{1b}," Crimmins, M.T.; O'Mahony, R. *Tetrahedron Lett.* **1989**, *30*, 5993-5996.
24. "Enone-Furan Photocycloadditions; A Model for the Synthesis of the Ginkgolides," Crimmins, M.T.; Thomas, J.B. *Tetrahedron Lett.* **1989**, *30*, 5997-6000.
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26. "Synthesis of Spiroketal: A General Approach," Crimmins, M.T.; O'Mahony, R. *J. Org. Chem.* **1990**, *55*, 5894-5900.
27. "Photochemical [2+2] Cycloadditions" in "Comprehensive Organic Synthesis" Vol. 3, Pergamon Press, Oxford, 1991, B.M. Trost, Ed.
28. "Protocols for the Preparation of the Four Possible Stereoisomeric α -Alkyl- β -hydroxy Carboxylic Acids From a Single Chiral Aldol Reagent," Van Draanen, N.A.; Arseniyadis, S.; Crimmins, M.T.; Heathcock, C.H. *J. Org. Chem.* **1991**, *56*, 2499-2506.
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30. "An Unusual Radical Fragmentation-Ring Expansion Sequence of Cyclobutyl Carbonyl Radicals," Crimmins, M.T.; Dudek, C.M.; Cheung, A. W.-H. *Tetrahedron Lett.* **1992**, *33*, 181-184.
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33. "Synthetic Studies on the Ginkgolides: Total Synthesis of (\pm)-Bilobalide," Crimmins, M.T.; Gray, J.L.; Jung, D.K. *J. Am. Chem. Soc.* **1993**, *115*, 3146-3155.
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35. "Formal 3+2 Cycloaddition by Addition of Zinc Homoenolates to Acetylenic Esters and Amides," Crimmins, M.T.; Nantermet, P.G.; Trotter, B.W.; Vallin, I.M.; Watson, P.S.; McKerlie, L.A.; Reinhold, T.L.; Cheung, A.W.H.; Stetson, K.A.; Dedopoulou, D.; Gray, J.L. *J. Org. Chem.* **1993**, *58*, 1038-1047.
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37. "Siloxanes as Temporary Tethers in [2+2] Photocycloadditions," Crimmins, M.T.; Guise, L.E. *Tetrahedron Lett.* **1994**, *35*, 1657-1660.
38. "Allene" Crimmins, M.T. in *Encyclopedia of Reagents for Organic Synthesis*, Pergamon Press, Oxford, 1994, L.A. Paquette, Ed.
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42. "Asymmetric Synthesis of 3',4'-Di-O-(-)-Camphanoyl-(+)-Cis-Khellactone (DCK), A Potent Anti-HIV Agent," Xie, L.; Crimmins, M.T.; Lee, K.H. *Tetrahedron Lett.* **1995**, *36*, 4529-4532.
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45. "A Practical Asymmetric Approach to Carbocyclic Nucleosides: Asymmetric Synthesis of 1592U89, a Potent Inhibitor of HIV Reverse Transcriptase," Crimmins, M.T., King, B.W. *J. Org. Chem.* **1996**, *61*, 4192-4193.
46. "An Asymmetric Total Synthesis of (+)-Milbemycin D," Crimmins, M.T.; Al-awar, R.S.; Vallin, I.M.; O'Mahony, R.; Hollis, W.G., Jr.; Bankaitis-Davis, D.M.; Lever, J.G. *J. Am. Chem. Soc.* **1996**, *119*, 7513-7528.
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52. "Enantioselective Synthesis of Cyclopentenones," U.S. Patent Serial No. 60/017,510 Filed March 10, 1996, Issued July, 1999, Crimmins, Michael T.
53. "A Mechanism of Carbon Monoxide Production from Volatile Anesthetics and Anhydrous Soda Lime in Anesthetic Circuits," Huh, B.K.; Passannante, A.N.; Crimmins M.T. *Anesthesiology* **1997** Suppl. S 87, A1138-A1138.
54. "Effects of Hydrogen Bonding on the Diastereoselectivity in Intramolecular Enone-alkene Photocycloadditions," Crimmins, M.T.; Choy, A.L. *J. Am. Chem. Soc.* **1997**, *119*, 10237-10238.
55. "Asymmetric Aldol Condensations with Titanium Enolates of Acyloxazolidinethiones: Dependence of Selectivity on Amine Base and Lewis Acid Stoichiometry," Crimmins, M.T.; King, B.W.; Tabet, E.A. *J. Am. Chem. Soc.* **1997**, *119*, 7883-7884.
56. "An Asymmetric Aldol - Ring Closing Metathesis Strategy for the Enantioselective Construction of Six to Nine Membered Oxygen Heterocycles," Crimmins, M.T.; Choy, A.L. *J. Org. Chem.* **1997**, *62*, 7548-7549.
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58. "Double Diastereoselection in Intramolecular Photocycloadditions: A Radical Rearrangement Approach to the Total Synthesis of the Spirovetivane Phytoalexin, (\pm)-Lubiminol," Crimmins, M.T.; Wang, Z.; McKerlie, L.A. *J. Am. Chem. Soc.* **1998**, *120*, 1747-1756.
59. "Recent Advances in the Asymmetric Synthesis of Carbocyclic Nucleosides," Crimmins, M.T. *Tetrahedron* **1998**, *54*, 9229-9272.
60. "Addition of Metalated Pyrones to β -Alkoxy Aldehydes. Synthesis of Hydroxylated Spiroketal," Crimmins, M.T.; Washburn, D.G.; Katz, J.D.; Zawacki, F.J. *Tetrahedron Lett.* **1998**, *39*, 3439-3442.
61. "A Convenient Synthesis of 3-Butenal," Crimmins, M.T.; Kirincich, S.J.; Wells, A.J.; Choy, A.L. *Synthetic Commun.* **1998**, *28*, 3675-3679.
62. "Synthesis of the AB Spiroketal Subunit of Spongistatin 1 (Altohyrtin A): The Pyrone Approach," Crimmins, M.T.; Washburn, D.G. *Tetrahedron Lett.* **1998**, *39*, 7487-7490.
63. "Asymmetric Total Synthesis of Callistatin A: Asymmetric Aldol Additions with Titanium Enolates of Acyloxazolidinethiones," Crimmins, M.T.; King, B.W. *J. Am. Chem. Soc.* **1998**, *120*, 9084-9085.

64. "Pinacol-Type Rearrangements of Intramolecular Photocycloadducts: Application of the 2,2-Dimethyl-4-Pentenoate Protecting Group," Crimmins, M.T.; Carroll, C.A.; Wells, A.J. *Tetrahedron Lett.* **1998**, *39*, 7005-7008.
65. "An Asymmetric Aldol - Ring Closing Metathesis Strategy for the Enantioselective Construction of Six to Nine Membered Oxygen Heterocycles: A Formal Total Synthesis of (+)-Laurencin," Crimmins, M.T.; Choy, A.L. *J. Am. Chem. Soc.* **1999**, *121*, 5663-5660.
66. "Total Synthesis of (±)-Ginkgolide B," Crimmins, M.T.; Pace, J.M.; Nantermet, P.G.; Kim-Meade, A.S.; Thomas, J.B.; Wagman, A.S.; Watterson, S.H. *J. Am. Chem. Soc.* **1999**, *121*, 10249-10250.
67. "Total Synthesis of (+)-Laurencin: An Asymmetric Alkylation - Ring Closing Metathesis Approach to the Synthesis of Medium Ring Ethers," Crimmins, M.T.; Emmitte, K.A. *Organic Lett.* **1999**, *1*, 2029-2032.
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69. "Synthesis of the C1 to C13 Fragment of Leucascandrolide A," Crimmins, M.T.; Carroll, C.A.; King, B.W. *Organic Lett.* **2000**, *2*, 597-599.
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71. "Solid Phase Synthesis of Carbocyclic Nucleosides," Crimmins, M.T.; Zuercher, W.J. *Organic Lett.* **2000**, *2*, 1065-1067.
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73. "Enantioselective Total Synthesis of the Marine Metabolite Prelaureatin," Crimmins, M.T.; Tabet, E.A. *J. Am. Chem. Soc.* **2000**, *122*, 5473-5476.
74. "Ring-Closing Metathesis for the Synthesis of Medium Ring Ethers: Conformational Effects on the Rates of Ring Closure," Crimmins, M.T.; Emmitte, K.A. *Synthesis* **2000**, 899-903.
75. "Total Synthesis of (±)-Ginkgolide B," Crimmins, M.T.; Pace, J.M.; Nantermet, P.G.; Kim-Meade, A.S.; Thomas, J.B.; Wagman, A.S.; Watterson, S.H. *J. Am. Chem. Soc.* **2000**, *122*, 8453-8463.
76. "Asymmetric Glycolate Alkylations: A Useful Extension of the Evans Asymmetric Alkylation," Crimmins, M.T.; Emmitte, K.A.; Katz, J.D. *Organic Lett.* **2000**, *2*, 2165-2167.
77. "Total Synthesis of (-) - Trehazolin via an Asymmetric Aldol - Ring Closing Metathesis Strategy," Crimmins, M.T.; Tabet, E.A. *J. Org. Chem.* **2001**, *65*, 0000.
78. "An Efficient Enantioselective Approach to Nucleoside Analogs," Crimmins, M.T.; King, B.W.; Zuercher, W.J.; Choy, A. L. *J. Org. Chem.* **2000**, *64*, 8499-8509.
79. "Asymmetric Aldol Additions with Titanium Enolates of Acyloxazolidinethiones and Acyl Thiazolidinethiones: Dependence of Selectivity on Amine Base and Lewis Acid Stoichiometry," Crimmins, M.T.; King, B.W.; Tabet, E.A.; Chaudhary, K. *J. Org. Chem.* **2001**, *65*, 0000.

80. "Total Synthesis of (-)-Isolaurallene," Crimmins, M.T.; Emmitte, K.A. *J. Am. Chem. Soc.* **2001**, *123*, 0000.
81. "Synthesis of the EF Fragment of Spongistatin 1," Crimmins, M.T.; Katz, J.D.; Captain, L.F.; Tabet, E.A. *manuscript in preparation*.

ABSTRACTS

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2. "A Highly Stereoselective Total Synthesis of (\pm)-Pentalenene," Crimmins, M.T., *Abstracts of the 187th American Chemical Society National Meeting*, April 9-13, 1984, Organic Division #31.
3. "Intramolecular Photocycloadditions: Approaches to Cyclopentanoid Natural Products," Crimmins, M.T.; Battigelli, L.C.; Bredon, L.D.; DeLoach, J.A.; Mascarella, S.W.; *Abstracts of the 1st Symposium on Latest Trends in Organic Synthesis*, May 28-31, 1984.
4. "Intramolecular Photocycloadditions: An Approach to the Total Synthesis of Silphinene and Laurenene," Bredon, L.D.; Crimmins, M.T.; Mascarella, S.W., *Abstracts of the 188th American Chemical Society National Meeting*, August 26-31, 1984, Organic Division #51.
5. "Studies Toward the Synthesis of the Avermectins and Milbemycins," Lever, J.G.; Hollis, W.G., Jr.; Crimmins, M.T., *Abstracts of the 36th Southeast Regional Meeting of the American Chemical Society*, October 24-26, 1984, #423.
6. "Total Synthesis of (\pm)-Pentalenic Acid," DeLoach, J.A.; Crimmins, M.T., *Abstracts of the 36th Southeast Regional Meeting of the American Chemical Society*, October 24-26, 1984, #426.
7. "Intramolecular Photocycloaddition-Cyclobutane Fragmentation: Total Synthesis of (\pm)-Silphinene," Crimmins, M.T.; Mascarella, S.W., *Abstracts of the 190th American Chemical Society National Meeting*, September 8-13, 1985, Organic Division # 32.
8. "Studies Directed Toward the Total Synthesis of the Milbemycins," Crimmins, M.T.; Bankaitis, D.M.; Lever, J.G.; Hollis, W.G., Jr.; *Abstracts of the 190th American Chemical Society National Meeting*, September 8-13, 1985, Organic Division #101.
9. "Intramolecular Photocycloaddition-Cyclobutane Fragmentation: Studies Directed Toward the Total Synthesis of the Fenestrane (\pm)-Laurenene: Synthesis of 15-Epilaurenene," Crimmins, M.T.; Gould, Lori D.; *Abstracts of the 191st American Chemical Society National Meeting*, April 13-18, 1986, Organic Division # 91 .
10. "Synthesis of the C-1 to C-10 Fragment of the Milbemycins and the Avermectins," Crimmins, M.T.; Lever, J.G.; *Abstracts of the 191st American Chemical Society National Meeting*, April 13-18, 1986, Organic Division #92.
11. "Studies Directed Toward the Total Synthesis of the Milbemycins," Crimmins, M.T.; Hollis, W.G., Jr.; Lever, J.G. ; *Abstracts of the 2nd Symposium on Latest Trends in Organic Synthesis*, May 29-31, 1986.
12. "Recent Progress Toward the Total Synthesis of the Milbemycins and Avermectins," Crimmins, M.T., O'Mahony, R.; *Abstracts of the 44th Southwest Regional Meeting of the American Chemical Society* , November 30-December 2, 1988, Organic Division #86.
13. "Progress Toward the Total Synthesis of Ginkgolides A and B,"Crimmins, M.T.; Thomas, J.B.; *Abstracts of the 41st Southeast Regional Meeting of the American Chemical Society*, October 9-11, 1989.

14. "Studies Toward the Synthesis of Ginkgolide B," Crimmins, M.T.; Nantermet, P.G. *Abstracts of the 202nd Meeting of the American Chemical Society*, August 25-30, 1991 Organic Division #2.
15. "Studies Toward the Total Synthesis of the Ginkgolides," Crimmins, M.T. *Abstracts of the 43rd Southeast Regional Meeting of the American Chemical Society*, November 13-15, 1991, #52.
16. "Total Synthesis of (±)-Bilobalide," Crimmins, M.T.; Jung, D.K.; Gray, J.L. *Abstracts of the 203rd Meeting of the American Chemical Society*, April 7-13, 1992 Organic Division #388.
17. "Addition of Zinc Homo-enolates to Acetylenic Esters and Amides, A Formal 3+2 Cycloaddition", Crimmins, M.T.; Nantermet, P.G.; Trotter, B.W.; Vallin, I.M. *Abstracts of the 204th Meeting of the American Chemical Society*, August 23-28, 1992 Organic Division #48.
18. "Stereoselective Intramolecular Photocycloadditions: Total Synthesis of (±)-Bilobalide," Crimmins, M.T.; Jung, D.K.; Gray, J.L. *Abstracts of the 204th Meeting of the American Chemical Society*, August 23-28, 1992 Organic Division #181.
19. "Stereoselective Intramolecular Enone Olefin Photocycloadditions of 1,7-Dienes: Model Studies on the Synthesis of Lycopodium Alkaloids," Crimmins, M.T.; Watson, Paul S. *Abstracts of the 205th Meeting of the American Chemical Society*, March 28 - April 2, 1993 Organic Division #143.
20. "Studies Toward the Total Synthesis of Milbemycin D", Crimmins, M.T.; Vallin, I.M. *Abstracts of the 205th Meeting of the American Chemical Society*, March 28 - April 2, 1993 Organic Division #114.
21. "Siloxanes as Temporary Tethers in [2+2] Photocycloadditions," Crimmins, M.T.; Guise, L.E. *Abstracts of the 205th Meeting of the American Chemical Society*, March 28 - April 2, 1993 Organic Division #190.
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23. "A Stereoselective Photocycloaddition Approach to Serratine," King, B.W.; Crimmins, M.T. *National Organic Symposium*, 1995, Williamsburg, VA
24. "A Practical Asymmetric Approach to Carbocyclic Nucleosides: Asymmetric Synthesis of 1592U89, a Potent Inhibitor of HIV Reverse Transcriptase" King, B.W.; Crimmins, M.T. *Abstracts of the 212th Meeting of the American Chemical Society*, August 25 - 29, 1996 Organic Division #165.
25. "Rearrangement of Cyclobutylcarbinyl Radicals. Application to the Total Synthesis of the Phytoalexin, Lubiminol" Wang, Z.; Crimmins, M.T.; McKerlie, L.A.; Cheung, A.W.-H. *Abstracts of the 212th Meeting of the American Chemical Society*, August 25 - 29, 1996 Organic Division #.
26. "Asymmetric Total Synthesis of Callistatin A: Asymmetric Aldol Additions with Titanium Enolates of Acyloxazolidinethiones" Crimmins, M.T.; King, B.W. *Abstracts of the 216th Meeting of the American Chemical Society*, August 23 - 27, 1998 Organic Division.

27. "Total Synthesis of (\pm)-Ginkgolide B," Crimmins, M.T.; Pace, J.M.; Nantermet, P.G.; Kim-Meade, A.S.; Thomas, J.B.; Wagman, A.S.; Watterson, S.H. *Abstracts of the 219th Meeting of the American Chemical Society*, March 25-31, 2000 Organic Division #844.
28. "Total Synthesis of (+)-Laurencin: An Asymmetric Alkylation - Ring Closing Metathesis Approach to the Synthesis of Medium Ring Ethers," Crimmins, M.T.; Emmitte, K.A. *Abstracts of the 219th Meeting of the American Chemical Society*, March 25-31, 2000 Organic Division #845.
29. "Synthesis of the CD Spiroketal Subunit of Spongistatin 1 (Altohyrtin A): The Pyrone Approach," Crimmins, M.T.; Katz, J.D. *Abstracts of the 219th Meeting of the American Chemical Society*, March 25-31, 2000 Organic Division #846.
30. "Titanium Enolates of Thiazolidinethione Chiral Auxiliaries: Versatile Tools for Asymmetric Aldol Additions," Crimmins, M.T. Chaudhary, K. *Abstracts of the 220th Meeting of the American Chemical Society*, August 19-24, 2000 Organic Division #345.
31. "A Solution to the Preparation of Crossed Photocycloadducts in Intramolecular [2+2] Photocycloadditions," Crimmins, M.T.; Hauser, E.B. *Abstracts of the 220th Meeting of the American Chemical Society*, August 19-24. Organic Division #21.
32. "Synthesis of the EF Fragment of Spongistatin 1," Crimmins, M.T.; Katz, J.D.; Captain, L.F.; Tabet, E.A. *Abstracts of the 220th Meeting of the American Chemical Society*, August 19-24. Organic Division #134.
33. "Enantioselective Total Synthesis of the Marine Metabolite Prelaureatin," Crimmins, M.T.; Tabet, E.A. *Abstracts of the 220th Meeting of the American Chemical Society*, August 19-24. Organic Division #8.
34. "Total Synthesis of Isolaurallene," Crimmins, M.T.; Emmitte, K.A. *Abstracts of the 220th Meeting of the American Chemical Society*, August 19-24. Organic Division #136.

INVITED RESEARCH SEMINARS

| | |
|---|------------|
| 72. Schering Corporation, Bloomfield, NJ | 9/25/2001 |
| 71. Bristol-Myers-Squibb Company, New Brunswick, NJ | 6/4/2001 |
| 70. R.W. Johnson Pharmaceutical Research Institute, Raritan, NJ | 4/18/2001 |
| 69. North Dakota State University, Fargo, ND | 2/27/2001 |
| 68. University of Minnesota, St. Paul-Minneapolis, MN | 2/26/2001 |
| 67. Astro-Zeneca Pharmaceuticals, Wilmington, DE | 2/06/2001 |
| 66. University of Texas at Austin, Austin TX | 1/19/2001 |
| 65. Texas A and M University, College Station, TX | 1/18/2001 |
| 64. University of Missouri, Columbia, MO | 11/17/2000 |
| 63. Pennsylvania State University, State College, PA | 11/6/2000 |
| 62. Colorado State University, Fort Collins, CO | 10/23/2000 |
| 61. Gulf Coast Chemistry Conference, Pensacola, FL | 9/15/2000 |
| 60. Wyeth-Ayerst, Pearl River, NY | 3/3/2000 |
| 59. University of California at Irvine, Irvine, CA | 12/11/99 |
| 58. Chiron Corporation, Emeryville, CA | 10/11/99 |
| 57. Merck, Sharp, and Dohme Co., Raritan, NJ | 5/12/99 |
| 56. Merck, Sharp, and Dohme Co., West Point, PA | 5/11/99 |
| 55. Dupont, Wilmington DE | 9/30/98 |
| 54. Eli Lilly and Co., Indianapolis, IN | 9/15/98 |
| 53. Ohio State University, Columbus, OH | 12/11/97 |
| 52. Hendrix College, Conway, AR | 11/17/97 |
| 51. University of Maryland, College Park, MD | 11/4/97 |
| 50. Sepracor, Inc; Marlborough, MA | 10/16/97 |
| 49. International Symposium on Olefin Metathesis, St. Augustine, FL | 7/16/97 |
| 48. Wayne State University, Detroit, MI | 1/17/97 |
| 47. Research Triangle Institute, Research Triangle Park, NC | 1/10/97 |
| 46. SUNY Stony Brook, Stony Brook, NY | 11/14/96 |
| 45. Wake Forest University, Winston-Salem, NC | 4/17/96 |
| 44. Indiana University, Bloomington, IN | 2/19/96 |
| 43. Ciba Geigy, Inc., Summit, NJ | 11/15/95 |
| 42. University of Richmond, Richmond, VA | 9/22/95 |
| 41. Ohio University, Athens, OH | 4/21/95 |
| 40. California Institute of Technology, Pasadena, CA | 3/16/95 |
| 39. University of California at Berkeley, Berkeley, CA | 3/15/95 |
| 38. Stanford University, Stanford, CA | 3/14/95 |
| 37. Emory University, Atlanta, GA | 11/30/94 |
| 36. Burroughs-Wellcome Company, Research Triangle Park, NC | 5/20/94 |
| 35. Pfizer Inc., Groton, CT | 5/12/94 |
| 34. Bristol-Myers-Squibb Company, New Brunswick, NJ | 1/20/94 |
| 33. Glaxo, Inc. Research Triangle Park, NC | 9/23/93 |
| 32. Gordon Research Conference on Heterocycles, New Hampton, NH | 7/8/93 |
| 31. R.W. Johnson Pharmaceutical Research Institute, Raritan, NJ | 12/5/91 |
| 30. Clemson University, Clemson, S.C. | 11/21/91 |
| 29. Merck, Sharp, and Dohme Co., West Point, PA | 11/9/90 |
| 28. University of Florida, Gainesville, FL | 2/15/90 |
| 27. Duke University, Durham, NC | 12/1/89 |
| 26. American Cyanamid Company, Princeton, NJ | 5/12/89 |
| 25. University of Virginia, Charlottesville, VA | 3/17/89 |
| 24. Rhone-Poulenc, Research Triangle Park, NC | 2/7/89 |
| 23. University of Texas, Austin, TX | 1/27/89 |
| 22. Texas A and M University, College Station, TX | 1/26/89 |
| 21. University of Colorado, Boulder, CO | 11/30/88 |
| 20. Ohio State University, Columbus, OH | 11/10/88 |
| 19. Proctor and Gamble Laboratories, Miami Valley, OH | 5/22/88 |

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| 18. Smith-Kline and French Laboratories, Philadelphia, PA | 1/29/88 |
| 17. Gordon Research Conference on Photochemistry, East Hanover, NH | 7/12/87 |
| 16. Merck, Sharp, and Dohme Company, Raritan, NJ | 5/15/87 |
| 15. Sandoz Research Institute, East Hanover, NJ | 3/13/87 |
| 14. Florida State University, Tallahassee, FL | 3/5/87 |
| 13. Wake Forest University, Winston-Salem, NC | 2/4/87 |
| 12. Stuart Pharmaceuticals, Wilmington, DE | 2/3/87 |
| 11. University of Akron, Akron, OH | 1/27/87 |
| 10. Swarthmore College, Swarthmore, PA | 9/26/86 |
| 9. North Carolina State University, Raleigh, NC | 2/24/86 |
| 8. Upjohn Company, Kalamazoo, MI | 9/27/85 |
| 7. Gulf Coast Chemistry Conference, Pensacola, FL | 9/20/85 |
| 6. Schering Corporation, Bloomfield, NJ | 6/6/85 |
| 5. E.I. Squibb and Sons Company, Lawrenceville, NJ | 9/16/84 |
| 4. E.I. Squibb and Sons Company, New Brunswick, NJ | 9/17/84 |
| 3. Burroughs-Wellcome Company, Research Triangle Park, NC | 2/10/84 |
| 2. Union Carbide Company, Research Triangle Park, NC | 4/19/83 |
| 1. University of North Carolina, Department of Pharmacy | 10/15/81 |

DEPARTMENTAL COMMITTEES

Secretary to Faculty (1981-82)
Undergraduate Studies Committee (1982-85)
Ad Hoc Curriculum Study Committee (1983-84)
Departmental A.B. Advisor (1982-86)
Fall Picnic Committee (1982-86)
Co-organizer NSF 400 MHz NMR Proposal (1984 with M.S. Brookhart)
Safety Committee (1985-87)
Organic Search Committee (1984, 1985, 1989)
Faculty Supervisor R-24B and EM360 NMR Spectrometers (1984-86)
Organizer, NSF 200 MHz NMR Proposal (1986)
Undergraduate Studies Committee (1987-89)
Graduate Studies Committee (1987-90)
Kenan Foundation Committee (1988)
Grievance Committee (1987-88)
Secretary, Organic Division (1987-91)
Faculty Search Committee (1989-90)
Five Year Planning Committee (1989-90)
UNC-Glaxo Symposium Committee (1989-)
Continuing Education Committee (1989-91)
Visiting Professors Committee (1990-92)
Vice-Chairman for Facilities and Space (1992-93)
Departmental Short Course Program (1982, 1992)
Colloquium Committee (1992-)
Buildings and Beautification Committee (1992-95)
Ad Hoc Committee on Tenure and Promotions Procedures (1993)
Ad Hoc Committee on Organizing Response to External Review (1994)
Ad Hoc Committee on Tenure and Promotions (1994-95)
Biological Chemistry Search Committee (1994-95)
Vice Chairman for Graduate Studies (1995-2000)
Organizer, NSF Three Year NMR Development Proposal (1995)
Planning Committee (1996)
Chair, Organic Search Committee (1996)
NMR Committee (1997-)
Organic Search Committee (1998)
Development Committee (1999-)
Visiting Lectures Committee (2000-)
Chair, Organic Search Committee (2000)

DEPARTMENTAL TEACHING

Chemistry 61, Organic Chemistry I: Fall '82, '83, '88, '89, '92, '95, '98, '99
Chemistry 65H, Organic Chemistry I, Honors: Fall '90, '96
Chemistry 66H, Organic Chemistry II, Honors: Spring '01
Chemistry 62, Organic Chemistry II: Spring '85, '86, '93, '96
Chemistry 160, Intermediate Organic Chemistry: Fall '87
Chemistry 166, Advanced Organic Chemistry I: Fall '84, '85, '93, '94, '00
Chemistry 168, Synthetic Aspects of Organic Chemistry: Spring '83, '84, '88, '89, '90, '91, '94, '97, '98, '99, '00
Chemistry 41L, Organic and Analytical Chemistry Laboratory: Fall '81
Chemistry 42L, Organic and Analytical Chemistry Laboratory: Fall '81
Chemistry 62L, Organic Chemistry Laboratory: Spring '88, '95
Chemistry 99, Undergraduate Research in Chemistry: Fall '81-'95, Spring '82 - '96
Chemistry 261, Seminar in Organic Chemistry: Fall, '83, '92
Chemistry 262, Seminar in Organic Chemistry: Spring '87, '95
Chemistry 265, Special Topics in Organic Chemistry: Heterocyclic Chemistry: Spring '91

Chemistry 265, Special Topics in Organic Chemistry: Photochemistry: Spring '93
Chemistry 265, Special Topics in Organic Chemistry: Advanced Topics in Synthesis, Spring '97
Chemistry 361, Research in Organic Chemistry: Fall '82 - '99, Spring '82 - '00
Chemistry 394, Dissertation: Fall '82-'99, Spring '82-'00

UNIVERSITY SERVICE

Faculty Council, elected Member (1986-89; 1995-1998), Agenda Committee (1997-98)
Faculty Advisor, Alpha Epsilon Delta Pre-Medical Fraternity (1986-91)
University Committee on Research (1993-96), Chair (1995-96)
Member-Administrative Board of the General College (1991-94)
Member-Institute for Natural Products Chemistry with the School of Pharmacy and
Department of Medicinal Chemistry (1984 -)
Vice Chancellor's Research Advisory Committee (1995-96)
Chair, Associate Dean's Oversight Committee on Conflict of Interest for Startup
Companies (1996-97)
Member-Administrative Board of the Graduate School (1997-2000)
University Teaching Awards Committee, Chair, Tanner-Friday Subcommittee (1999-
2000)
Freshman Reading Selection Committee (2000)

REGIONAL-NATIONAL SERVICE

NIH Grantsmanship Workshop Panel, ACS National Meeting, Washington, DC, 2000
Membership Committee of NC Section of American Chemical Society (1983-)
Nominations Committee of NC Section of American Chemical Society (1987, 1996)
Secretary, NC Section of American Chemical Society (1988-90)
Canvassing Committee for ACS Award for Creativity in Organic Synthesis (1989-91), Chairman (91)
Invited Observer, IUPAC Commission on Nomenclature, IUPAC Congress, Boston MA (1987)
Chairman-Elect, NC Section of American Chemical Society (1993)
Chairman, NC Section of American Chemical Society (1994)
Invited Expert Analyst: *ChemTracts Organic Chemistry* (1993-)
NIH Biorganic and Natural Products Study Section Special Emphasis Panel (November, 1995)
NIH Medicinal Chemistry A Study Section, ad hoc member (February 1996, October 2000)

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| Referee- | Journal of the American Chemical Society | Organic Letters |
| | Journal of Organic Chemistry | Tetrahedron Letters |
| | Tetrahedron: Asymmetry | Tetrahedron |
| | Organometallics | Chemical Reviews |
| | Canadian Journal of Chemistry | Syn Lett |
| | Synthetic Communications | Organic Reactions |
| | Journal of Natural Products | Synthesis |
| | Biorganic and Medicinal Chemistry | Journal of Chemical Research |
| | Biorganic and Medicinal Chemistry Letters | |
| | Journal of the Chemical Society | |
| | Journal of the Chemical Society: Chemical Communications | |
| | Journal of Carbohydrate Chemistry | |

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| Reviewer- | Research Corporation | Petroleum Research Fund |
| | National Science Foundation | Jeffrus Trust |
| | Sloan Foundation | International Science Federation |

North Carolina Board of Science and Technology
Arkansas Board of Science and Technology
NIH Biorganic and Natural Products SS Special Emphasis Panel (November, 1995)
NIH Medicinal Chemistry A Study Section, ad hoc member (Feb, 1996; Oct. 2000)
NIH Physical Biochemistry Study Section, ad hoc member (October, 1997)

Research Grants Council of Hong Kong
DISSERTATIONS AND THESES

- | | |
|----------------------------------|---|
| Lever, John G., Ph.D. 1986 | "Studies Toward the Synthesis of the Milbemycins and Avermectins. Synthesis of the Hexahydrobenzofuran Subunit" currently employed Milliken Research Corporation, Spartanburg, SC |
| Bankaitis, Danute M., Ph.D. 1986 | "Studies Toward the Synthesis of the Milbemycins and Avermectins. A Formal Synthesis of Milbemycin β_3 " currently employed Amgen Corporation |
| Mascarella, S. Wayne, Ph.D. 1986 | "The Total Synthesis of (\pm)-Silphinene" currently employed Research Triangle Institute, Research Triangle Park, NC |
| Deloach, Joseph A., Ph.D. 1987 | "A Photochemical Approach to the Synthesis of Cyclopentanoid Natural Products" currently employed Eastman Chemical Co., Kingsport, TN |
| Gould, Lori D., Ph.D. 1987 | "Total Synthesis of Laurenene" currently employed Lee Pharmaceuticals |
| Hollis, W. Gary, Jr., Ph.D. 1988 | "Studies Toward the Synthesis of Milbemycin D" currently employed Roanoke College, Roanoke, VA |
| O'Mahony, Rosemary, Ph.D. 1988 | "Studies Toward the Synthesis of Spiroketal Containing Natural Products: Talaromycin A and Avermectin B1b" currently employed Glaxo Wellcome Inc., Research Triangle Park, NC |
| Dudek, Caroline M., Ph.D. 1989 | "Studies Toward the Total Synthesis of Subergorgic Acid" currently employed Dupont, Brookline, MA |
| Thomas, James B., Ph.D. 1990 | "Studies Toward the Synthesis of Ginkgolide B" currently employed Research Triangle Institute, Research Triangle Park, NC |
| Stetson, Katherine M., M.S. 1990 | "Studies in Asymmetric Photocycloadditions" currently employed Glaxo Wellcome Inc., Research Triangle Park, NC |
| Gray, Jeffrey L., Ph.D. 1991 | "A Formal Synthesis of (\pm)-Bilobalide" currently employed Proctor and Gamble Co., Cincinnati, OH |
| Cheung, Adrian-W.H., Ph.D. 1991 | "Cyclobutylcarbinyl Radical Cleavage and Rearrangement: Studies Toward the Total Synthesis of Lubiminol" currently employed Hoffman La Roche Co., Nutley, NJ |
| Dedopoulou, Dimitra, Ph.D. 1991 | "Studies Toward the Synthesis of Retigeranic Acid" currently employed Queens College, Charlotte, NC |
| Reinhold, Tracy L., Ph.D. 1992 | "Studies Toward the Synthesis of Crinipellin A" currently employed University of North Carolina, Chapel Hill |

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| Jung, David K., Ph.D. 1992 | "A Total Synthesis of (±)-Bilobalide" currently employed Glaxo Wellcome Inc., Research Triangle Park, NC |
| McKerlie, Lynne A., Ph.D. 1992 | "Studies Toward the Synthesis of Lubiminol" currently employed BASF, Research Triangle Park, NC |
| Nantermet, Philippe G., Ph.D. 1993 | "Studies Toward the Total Synthesis of the Ginkgolides" currently employed Merck and Co. West Point, PA |
| Vallin, Isabelle M., Ph.D. 1993 | "An Approach to the Synthesis of Milbemycin D" currently employed Proctor and Gamble, Belgium |
| Watson, Paul S., Ph.D. 1994 | "Stereoselective Photocycloadditions of 1,7-Dienes. An Approach to the Lycopodium Alkaloid Magellanimone" currently employed Dupont Pharmaceuticals, Wilmington, DE |
| Huang, Sujuan, M.S. 1995 | "Radical Fragmentations of Cyclobutanes for the Synthesis of Medium Rings" currently employed Novartis, Summit, New Jersey |
| Mathes, Brian M., M.A. 1996 | "An Approach to the Lycopodium Alkaloid Magellanimone" currently employed Eli Lilly, Indianapolis, IN |
| Guisse Lisa E., Ph.D. 1996 | "An Intramolecular [2+2] Photocycloaddition Approach to Taxane Diterpenes" currently employed Pharmacopeia, Philadelphia, PA |
| Carroll, C.A., M.A. 1996 | "Studies Directed Toward the Total Synthesis of Magellanimone: A Focus on the Rearrangement of the Fused Ring System" |
| Tyhnas, John, M.A. 1997 | "Studies Directed Toward the Total Synthesis of Taxusin" currently employed Ligand Pharmaceuticals, San Diego, CA |
| Rafferty, Steven W., M.A. 1997 | "Stereo and Regioselective Reductive Fragmentations of Spiroketal" currently employed Glaxo-Wellcome, RTP, NC |
| Wang, Zhuo Ph.D., 1997 | "Total Synthesis of (±)-Lubiminol" currently postdoctoral fellow, University of Ottawa, Ottawa, Ontario |
| King, Bryan W., Ph.D. 1998 | "Asymmetric Aldol Additions with Titanium Enolates of Acyloxazolidinethiones: Asymmetric Synthesis of the Carbocyclic Nucleoside 1592U89; Asymmetric Total Synthesis of Callystatin A:" currently employed Dupont Pharmaceuticals, Wilmington, DE |
| Murphy, Meghan M., M.S. 1999 | "Enantioselective Synthesis of Carbocyclic Nucleosides" |

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|--------------------------------------|---|
| Choy, Allison L., Ph.D. 1999 | "Enantioselective Synthesis of Medium Ring Ethers" currently postdoctoral fellow, University of Michigan, Ann Arbor, MI |
| Carroll, Charlotte A., Ph.D. 1999 | "Approach to the Synthesis of the Antitumor Agent Leucascandrolide A" currently employed Magellan Laboratories, Research Triangle Park, NC |
| Washburn, David G., Ph.D. 1999 | "Synthesis of the AB Spiroketal Fragment of Spongistatin 1" currently postdoctoral fellow University of Texas at Austin, Austin, TX |
| McDowell, Jacob, M.A. 2000 | "Studies Toward the Total Synthesis of Mucocin" |
| Lappenbusch, William C., Ph.D., 2000 | "Studies Toward the Total Synthesis of Cocaine and Ceroplastol" currently employed Chemcodes, RTP, NC |
| Tabet, Elie A., Ph.D., 2000 | "Asymmetric Aldol-Metathesis Approach to the Synthesis of Carbocycles and Heterocycles: Total Synthesis of Trehazolin, Prelaureatin and Laurallene" currently postdoctoral fellow, Stanford University |
| Wells, Angela L., Ph.D. 2000 | "Studies Toward the Total Synthesis of Magellaninone and Mucocin", currently postdoctoral fellow, Ohio State University |

POSTDOCTORALS

| | |
|----------------------------------|---|
| Kim-Meade, Agnes S. (1993-1996) | currently employed: Schering Corp., Bloomfield, NJ |
| Zawacki, Frank J. (1993-1996) | currently employed: Helios Pharmaceuticals, Lexington, KY |
| Al-awar, Rima S. (1993-1995) | currently employed: Eli Lilly and Co., Indianapolis, IN |
| Wagman, Allan S. (1995-1996) | currently employed: Chiron, San Francisco, CA |
| Kirincich, Steven J. (1996-1998) | currently employed: Genetics Institute, Cambridge, MA |
| Watterson, Scott H. (1996-1998) | currently employed: Bristol-Myers Squibb, Lawrenceville, NJ |
| Captain, Laura F. (1997-1999) | currently employed: Johnson and Johnson, La Jolla, CA |
| Zuercher, William (1998-2000) | currently employed: Glaxo-Wellcome Inc., RTP, NC |
| Pace, Jennifer M. (1998-2000) | currently employed: Abbott Laboratories, Abbott Park, IL |
| Nakagawa, Kyoko (1998-) | |

UNDERGRADUATE RESEARCH ASSISTANTS

| | |
|--------------------------------|-------------------------------|
| Lowen, Gregory T. (1981-82) | Schetzina, Karen (1991-93) |
| Hollis, W. Gary, Jr. (1982-83) | Trotter, B. Wesley (1991-93) |
| Linder, Lori A. (1982-83) | Shakib, Sharene (1991-93) |
| Washburn, Lisa K. (1982-83) | Lacey, D. Borden (1992-94) |
| Battigelli, Lisa C. (1984-85) | Dean, William (1993-94) |
| Dickson, John K. (1984-85) | Danek, Krisstina (1993-94) |
| Courtney, Ray D. (1985-87) | Davidson, Stephanie (1994-95) |
| Blanton, Douglas C. (1986-87) | Davis, Jamie (1995-96) |
| Huber, Scott K. (1986-87) | Downey, Wade (1996-97) |
| Ludwig, Beverly (1986-87) | Williams, John (1997) |
| Wills, Matthew K. (1986-88) | Wagner, Diana (1997) |
| Dore, Timothy (1988-90) | Inman, J. Lucas (1997-1998) |
| Biswas, Kunda, (1991-93) | McCall, Chad (1997-1998) |

CURRENT RESEARCH GROUP

| | |
|----------------------|----------------------|
| Allwein, Shawn | postdoctoral student |
| Brown, Brandon | graduate student |
| Chaudhary, Kleem | graduate student |
| Cleary, Pamela | graduate student |
| DeBaillie, Amy | graduate student |
| Diaz, Caroline | graduate student |
| Diaz, Frank | graduate student |
| Emmitte, Kyle A. | graduate student |
| Green, Jennifer | graduate student |
| Hauser, E. Bryan | graduate student |
| Katz, Jason D. | graduate student |
| Looker, Adam R | postdoctoral student |
| Nakagawa-Goto, Kyoko | postdoctoral student |
| Powell, Mark T. | postdoctoral student |
| She, Jin | graduate student |
| Siliphaivanh, Phieng | graduate student |
| Slade, David | graduate student |
| Smalley, Grace | graduate student |
| Stanton, Matthew | graduate student |
| | |
| Heady, Tiffany | postdoctoral student |

GRANT ACQUISITIONS

- "Studies in Intramolecular Photocycloadditions: An Approach to Pentalenic Acid," Petroleum Research Fund, June 1, 1982 - August 31, 1984; \$10,000.
- "Asymmetric Diels-Alder Reactions," University Research Council, April 1982 - 1984; \$1,500.
- "400 MHz Varian NMR Spectrometer," National Science Foundation, 1984 (with M.S. Brookhart), \$200,000.
- "Total Synthesis of The Avermectins," Merck, Sharp and Dohme Co., April 1, 1983; \$1,500.
- "Total Synthesis of The Avermectins and Milbemycins," National Institutes of Health, AI-19544, March 1, 1983 - February 28, 1986; \$233,547.
- "Total Synthesis of Laurenene," Junior Faculty Development Award, UNC-CH, January 1, 1984 - December 31, 1984, \$5,000.
- "Synthesis of Cyclopentanoids by Photocycloadditions," National Institutes of Health, GM-38904, July 1, 1983 - June 30, 1986; \$194,389.
- "Total Synthesis of Milbemycins and Related Studies," National Institutes of Health, AI-19544, September 1, 1986 - August 31, 1989; \$368,022.
- "200 MHz NMR Spectrometer, National Science Foundation, 1986, \$150,000.
- "Synthesis of the Milbemycins," The Upjohn Co., March 1, 1987, \$3,000.
- "Synthesis of Cyclopentanoids by Photocycloadditions," National Institutes of Health, GM-38904, August 1, 1987 - July 31, 1990; \$355,288.
- "Synthesis of Ginkgolide B," Rhone Poulenc Co., \$5,500.
- "Synthesis of Ginkgolide B," Randleigh Foundation, Chapel Hill, NC., \$5,000.
- "Cyclopentanoids by Photocycloadditions," National Institutes of Health, GM-38904, July 1, 1991 - June 30, 1994; \$449,688.
- "Synthetic Applications of Photocycloadditions," National Science Foundation, CHE-9014641, August 15, 1990 - December 31, 1993, \$217,600.
- "Photocycloaddition-Fragmentation Sequences in Synthesis," Petroleum Research Fund, January 1, 1991 to December 31, 1993, \$40,000.
- "Synthesis of Ginkgolide B," Rhone Poulenc Co., unrestricted grant, \$12,000.
- "Synthetic Applications of Photocycloadditions," National Institutes of Health, GM-38904, July 1, 1994 to June 30, 1998, \$721,980.
- "Photocycloadditions in Synthesis," National Science Foundation, CHE-9319512, March 1, 1994 to February 28, 1997, \$231,000.
- "Asymmetric Synthesis of Polyketides" National Institutes of Health, CA-63572, February 1, 1995 to January 31, 1998, \$587,649.

"Research Opportunity Award for George Maguire, Methodist College" National Science Foundation, May 15, 1995 to August 15, 1995; \$12,000.

"NMR Development Plan for the Chemistry Department at The University of North Carolina At Chapel Hill" National Science Foundation, 7-1-96 to 6-30-98. Funded for \$836,660 for two years.

"Minority Supplement for Angela Wells" National Institutes of Health, GM38904, Funded for March 1, 1996 to June 30, 1996, \$19,950 per year.

"The Need for and Supply of African-American Ph.D. Chemists" Alfred P. Sloan Foundation, \$210,000, January 1, 1997 to December 31, 1999. (with S.A. Evans and E.T. Samulski)

"Enantioselective Synthesis of Nucleoside Analog Libraries" Glaxo-Wellcome, Inc. \$125,000, July 1, 1997 to June 30, 1998.

"Asymmetric Synthesis of Polyketides" National Institutes of Health, CA-63572, July 1, 1998 to June 30, 2002, \$749,693.

"Asymmetric Synthesis of Novel Natural Products," National Institutes of Health, GM-38904, July 1, 1998 to June 30, 2002, \$831,960 .

"Enantioselective Synthesis of Nucleoside Analog Libraries" Glaxo-Wellcome, Inc. \$125,000, July 1, 1999 to June 30, 2000.

"Minority Supplement for Frank Diaz" National Institutes of Health, GM38904, Funded for July 1, 1999 to June 30, 2002, \$102,621.

"Asymmetric Synthesis of Medium Ring Ethers" National Institutes of Health, GM-60567, January 1, 2000 to December 31, 2003, \$758,778.

"Training of Scientifically Versatile Women and Minorities in the Chemical Profession" Department of Education, Graduate Assistance in Areas of National Need (GAANN), August 15, 2000 to August 14, 2003, \$765,600.

"The Need for and Supply of African-American Ph.D. Chemists" Alfred P. Sloan Foundation, \$270,000, January 1, 2000 to December 31, 2003.

DEPARTMENTAL TEACHING: CAROLINA COURSE REVIEW RANKINGS

Listed below are the percentile rankings for overall effectiveness of the instructor. The norm includes courses from all departments within the University.

Chemistry 168, Synthetic Aspects of Organic Chemistry:

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|-----------------|-----------------|
| Spring '83, 93% | Spring '90, 77% |
| Spring '84, 93% | Spring '94, 87% |
| Spring '88, 95% | Spring '98, 56% |
| Spring '89, 89% | |

Chemistry 166, Advanced Organic Chemistry I:

Fall '84, 53%
Fall '85, 71%
Fall '93, 61%
Fall '94, 81%

Chemistry 61, Organic Chemistry I:

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| Fall '82: 53% | Fall '89, 55% |
| Fall '83, 66% | Fall '92, 68% |
| Fall '88, 68% | Fall '95, 70% |

Chemistry 62, Organic Chemistry II,

Spring '85, 63%
Spring '86, 78%
Spring '93, 87%
Spring '96, 91%

Chemistry 65H, Honors Organic Chemistry I

Fall '96, 83%